New Jersey Department of Transportation
CORRECTIVE ACTION NOTICE

QUALITY MANAGEMENT SERVICES

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CAN No. CAN045

Approved: B. Strizki
Date: August 1, 2001

Subject: Implementation of Subsurface Utility Engineering

Bureau(s) Affected: All Design Consultants
In–House Production Teams
Division of Project Management
Bureau of Project Scope Development
Bureau of Civil Engineering – Utility & Railroad Engineering Unit
Bureau of Civil Engineering – Survey Services Unit
Bureau of Program Support Services

Description of Issue(s):

Based on the results of many 70-90% completion meetings and Construction Orders, it has been found that projects often impact existing utilities resulting in numerous construction orders, contractor claims, and sometimes utility damages during construction. Utility owner's records concerning underground utility installations are sometimes outdated or inaccurate. The use of this information during scope and design development of Capital Projects has resulted in construction problems attributable to underground utilities. Utility conflicts typically occur on projects where significant excavation is required, such as roadway reconstruction and rehabilitation projects, widening projects and intersection improvement projects. These types of projects represent a significant portion of the Department's construction program.

As a means of reducing costs and delays on highway projects, Subsurface Utility Engineering (SUE) has been recognized as a valuable tool in the design and construction of projects. The technology involves selection and use of appropriate techniques to acquire a desired quality level of information. This information can be used during the early development of a highway project in order to best identify and resolve potential utility conflicts. SUE incorporates new and existing technologies to accurately identify and map underground utilities, which will reduce the necessity for redesign and therefore reduce costs due to Construction Orders.

Corrective Action Plan:

To better manage the risks associated with subsurface utilities and in an effort to minimize the impact to our construction contracts, the following are some of the types of projects that will be required to contain a provision for the Prime Consultant or In-House Designer to obtain a sub-consulting firm that is pre-qualified to perform SUE for locating underground utilities:

- Projects in a highly urbanized area
- Widening and Reconstruction projects
- Projects along freeways and interstate highways that will impact local roads and ramps
- When the fill on a project does not exceed 3 feet
- Anytime the existing ground is penetrated, and/or excavation exceeds, 2 feet or more (e.g. – guide rail, manholes, foundations, inlets, etc.)
- Any other projects deemed appropriate

The following are examples of types of projects that typically are exempted from this requirement:

- Deck patching
- Concrete pavement rehabilitation
- Wetland mitigation
- Landscape/roadside rehabilitation
- New alignments in non-urbanized areas
- Bike paths
- Hot mix asphalt pavement milling and resurfacing contracts (without guide rail installation)
- Interstate highways where widening occurs in the median
- Projects where the profile does not get lowered more than 2 feet

In order to implement this requirement, the following responsibilities are identified:

NEW STARTS:

Feasibility Assessment

- **Consultant** - Responsible for determining if the project is an appropriate candidate for the use of S.U.E. based upon the previous requirements. The consultant shall make a recommendation in conjunction with the Bureau of Project Scope Development (BPSD), and in collaboration with the Utility & Railroad Engineering Unit, for a S.U.E. firm to perform Quality Level B and/or Quality Level A for utility mapping of underground utilities in the project, or not to utilize a S.U.E. firm for this purpose.
- **Utility & Railroad Engineering Unit** – Responsible for evaluating and approving the recommendation of the consultant. Inform BPSD of its approval of the recommendation for the utilization of a S.U.E. firm.
- **The Bureau of Project Scope Development** - This unit shall be responsible for including the requirement to utilize S.U.E. in the project's "Transfer Package to Final Scope Development" if the Utility & Railroad Engineering Unit approves the consultant's recommendation. The consultant contract for the S.U.E. firm will include providing designation, location, and data management of underground utilities.
- **The Bureau of Program Support Services** – In consultation with BPSD, this unit is responsible for adding a "SUE Subconsultant – Yes/No" check box on page one of the Project Scope of Work form.

Final Scope Development

- **Project Manager –** Responsible for including the Subsurface Utility Engineering requirements in the Designer's Scope of Work with input from the Utility & Railroad Engineering Unit relative to the level of S.U.E. required. Also responsible for including any additional amounts of designating and/or locating, and data management services required above the minimums indicated in the attached Scope of Work.
- **Designer** – Responsible for developing a proposal based on the attached Scope of Work and in conjunction with Activity Descriptions 1105 and 1120. Additionally responsible for ensuring the plans are being developed in accordance with Section 10 of the Procedures Manual (Utilities) and in accordance with the attached Scope of Work. On in-house design projects the S.U.E. activities will be accomplished by means of an existing task order agreement administered by the Survey Services Unit.
- **Utility & Railroad Engineering Unit** – Responsible for providing technical assistance to the Designer regarding the detail required for designating, locating, and data management of the underground utilities.

EXISTING PROJECTS IN FINAL SCOPE DEVELOPMENT:

For projects in FSD prior to the execution of the Utility Agreement (Activity 1135).

- **Designer** (Consultant or In-House Production Unit) - Responsible for determining if the project is an appropriate candidate for the use of S.U.E. based upon the previous requirements. The designer shall make a recommendation in conjunction with the Project Manager and in collaboration with the Utility & Railroad Engineering Unit, for a S.U.E. firm to perform Quality Level B and/or Quality Level A for utility mapping of underground utilities in the project, or not to utilize a S.U.E. firm for this purpose.
- **Utility & Railroad Engineering Unit** – Responsible for evaluating and approving the recommendation from the Designer. This unit is also responsible for providing technical assistance to the Designer regarding the detail required for designating, locating, and data management of the underground utilities.
- **Project Manager** - Responsible for incorporating S.U.E. into the project by means of a Consultant Agreement Modification with input from the Utility & Railroad Engineering Unit. If execution of a CAM does not allow for the S.U.E. services to be completed prior to the execution of the utility agreement, this work will be performed by existing Task Order Agreement as directed by the Utility & Railroad Engineering Unit. The PM is further responsible for revising any existing project schedules that will be affected by this Corrective Action Notice.

The Utility & Railroad Engineering Unit is responsible for incorporating these S.U.E. requirements into the Utility Process for Designers and Section 10 of the NJDOT Procedures Manual by means of a Baseline Document Change. Until this is accomplished, this Corrective Action Notice shall be in effect.

Implementation: Immediately